

REMARKS

Claim Status

Claims 1, 2, 8-10, 12 and 18-21 are presented for examination, with claims 1, 8 and 18 being in independent form. Dependent claims 4 and 6 have been canceled. Claims 1, 8 and 18 have been amended to incorporate the features of canceled dependent claims 4 and 6. Additional support for the amendment to claim 18 may be found, for example, at pg. 2, line 25 and pg. 8, lines 23-25 of specification as originally filed. No new matter has been added. Reconsideration of the application, as amended, is respectfully requested.

Overview of the Office Action

Claims 1, 4, 6, 8, 10, 12 and 18-21 stand rejected under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 6,830,494 (“*Yamazaki*”) in view of U.S. Publication No. 2002/0045030 (“*Ozin*”), while claims 2 and 9 stand rejected as obvious over *Yamazaki* in view of *Ozin*, and further in view of U.S. Patent No. 6,630,785 (“*Lu*”).

Applicants have carefully considered the Examiner’s rejection, and the comments provided in support thereof, and respectfully disagree with the Examiner’s analysis. For the reasons which follow, it is respectfully submitted that all claims of the present application are patentable over the cited art.

Patentability of the Amended Independent Claims over the Prior Art Under 35 U.S.C. §102

Independent claim 1, which has been amended to incorporate the limitations of claims 4 and 6 (now canceled), now recites “wherein a stacked layer is formed by repeating step (b) with a different solution containing a different material, before removal of said cover layer, or by after step (c), repeating steps (a)(ii), (b) and (c) with a different solution containing a different

material”. Independent claim 8, which has been amended to incorporate the limitations of claim 6 (now canceled), now recites “wherein a stacked layer is formed by repeating step (b) with a different first solution containing a different first material and step (e) with a different second solution containing a different second material, before removal of said cover layer, or by, after step (c), repeating steps (a)(ii), (b) and (c) with a different first solution containing a different first material and, after step (f), repeating steps (d), (e) and (f) with a different second solution containing a different second material”. Independent claim 18 has also been amended to incorporate the features of canceled claims 4 and 6, and to further recite “and, after step (f), repeating steps (d), (e) and (f) with a different second solution containing a different second material”. Thus, amended independent claims 1, 8 and 18 define methods for producing stacked, structured layers on a substrate. Additional support for the amendment to claim 18 may be found, for example, at pg. 2, line 25 and pg. 8, lines 23-25 of the specification as originally filed. No new matter has been added.

The Examiner (pg. 2 of the Office Action) concedes that *Yamazaki* fails to teach or suggest the claimed invention. *Ozin* has been cited to provide what *Yamazaki* lacks, i.e., “pressing a cover layer onto a pattern layer, dipping the substrate to form EL layers through capillary action, and removing the cover layer”. However, the combination of *Yamazaki* and *Ozin* fails to achieve the claimed invention, as recited in amended independent claims 1, 8 and 18.

Ozin discloses methods for producing structured, colloidal crystals. It is not possible to produce stacked layers using the methods disclosed in *Ozin*. In a first method (i.e., paragraphs [0125] and [0126]), a second method 2 (i.e., paragraph [0144]), a fourth method (i.e., paragraph [0185]) and a fifth method (i.e., paragraph [0190]) of *Ozin*, the use of substrates that are pre-structured is disclosed. In a third method (i.e., paragraph [0170]) and a sixth method (i.e., paragraph

[0199]) of *Ozin*, the use of an elastomeric patterned stamp, which is placed on a substrate to create channels on a flat substrate, is disclosed. *Ozin* thus teaches six methods wherein several coating methods are combined with colloidal crystal self-assembly and lithography to produce patterned crystalline colloidal crystals. *Ozin* clearly teaches the use of pre-structured substrates that are completely filled with an aqueous solution. As taught by FIG. 4 and described in paragraph [0150] of *Ozin*, there is no patterned surface of the substrate that remains to which a further application of layers can be made.

With respect the third method, *Ozin* (paragraphs [0170] and [0199], FIG. 8) teaches additional methods in which patterned elastomeric stamps are used to produce structured layers of crystals by completely filling the space between the patterned stamp and the substrate. After such crystal patterns are produced, the stamp is peeled-off from the substrate. Here, the thickness of the stamp controls the channel depth of the crystal pattern produced on the substrate. In view of the teachings of *Ozin*, it is therefore not possible to re-apply the stamp on the crystal pattern to produce another patterned layer of crystals, because the space between the stamp and substrate is completely filled in by the stamp itself. *Ozin* therefore fails to teach or suggest Applicants' claimed method for producing stacked patterned layers that involves a repetition of steps using different materials. Therefore, *Ozin* fails teach or suggest now amended independent claims 1, 8 and 18.

Yamazaki, on the other hand, discloses a method for producing optoelectronic devices with a structured layer with an ink-jet process (see col. 5, lines 5-17). *Yamazaki* is absolutely silent with respect to methods using capillary forces. Consequently, the skilled person would have no reason to attempt to achieve the method recited in now amended independent claims 1, 8 and 18 by combining the methods taught in *Ozin* and *Yamazaki*. Absent an impermissible hindsight reconstruction based on Applicants' own teachings in the instant application, it would

not be obvious to the skilled person to even obtain the invention recited in independent claims 1, 8 and 18. In any event, the combination of *Ozin* and *Yamazaki* fails to provide the skilled person with a method using capillary forces to produce stacked structured layers in the manner disclosed and claimed. Consequently, the method recited in each of amended independent claims 1, 8 and 18 are not rendered obvious and unpatentable over the combination of *Ozin* and *Yamazaki*.

The Examiner has combined *Lu* with *Yamazaki* and *Ozin* to reject dependent claims 2 and 9. However, it is clear that *Yamazaki*, *Ozin* and *Lu*, applied individually or in combination, fail to bridge the above-discussed gaps between the method recited in independent claims 1 and 8, respectively. Accordingly, dependent claims 2 and 9 are patentable over the combination of *Yamazaki*, *Ozin* and/or *Lu* based on their various dependencies on independent claims 1 or 8. Therefore, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are respectfully requested, and a notice to that effect is earnestly solicited.

Dependent claims

In view of the patentability of independent claims 1, 8 and 18, for the reasons presented above, each of dependent claims 2, 9, 10, 12 and 19-21, is patentable therewith over the prior art. Moreover, each of these claims includes features which serve to even more clearly distinguish the invention over the applied references.

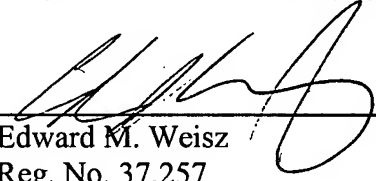
Conclusion

Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

Should the Examiner have any comments, questions, suggestions or objections, the Examiner is respectfully requested to telephone the undersigned in order to facilitate reaching a resolution of any outstanding issues.

Respectfully submitted,
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